

Amendment and Response

Applicant: Nicola Da Dalt

Serial No.: 10/541,049

Filed: February 13, 2006

Docket No. 1435.128.101/12928US

Title: DEVICE AND METHOD FOR FREQUENCY SYNTHESIS

REMARKS

The following remarks are made in response to the Non-Final Office Action mailed June 5, 2007. Claims 17-39 were rejected. Claims 20-21, 26-28, and 32-39 have been cancelled without prejudice. With this Response, claims 17 and 29 have been amended. Claims 17-19, 22-25, and 29-31 remain pending in the application and are presented for reconsideration and allowance.

In the Drawings

The Examiner objected to the drawings because Figure 1 should be designated by a legend such as "Prior Art".

Applicant has submitted a Replacement Sheet in which Figure 1 is designated as "Prior Art". Applicant believes that the Figures are now in condition for allowance and respectfully requests that the objection to the drawings be removed.

Claim Rejections under 35 U.S.C. § 102

The Examiner rejected claims 17-22, 24, 25, and 29-39 under 35 U.S.C. § 102(b) as being anticipated by the Duff GB Patent No. 2,002,157.

The Examiner rejected claims 17 and 23 under 35 U.S.C. § 102(b) as being anticipated by the Hiroto EP Patent No. 0 430 493.

The Examiner rejected claims 26-28 under 35 U.S.C. § 102(b) as being anticipated by the Mucke et al. U.S. Patent No. 6,211,745.

Amended independent claim 17 includes limitations from previous dependent claim 21 including wherein the control device is configured to drive the oscillator such that the at least two generated output frequencies are alternated at an average frequency that is less than the at least two possible output frequencies. Amended independent claim 29 includes limitations from previous dependent claim 33 of alternating the at least two generated output frequencies at an average frequency that is less than the at least two different output frequencies.

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The Duff GB Patent does not teach or suggest the above limitations of amended independent claim 17 and amended independent claim 29. The Examiner specifically cites the Duff GB Patent at Page 2, lines 104-110 which states:

By selectively opening and closing first switching means 3 and second switching means 6 for desired periods of time, a higher or lower average frequency (relative to that frequency normally supplied by divider 4 at output terminal 40) will appear at terminal 8.

This text of the Duff GB Patent, however, does not disclose any statement regarding speed of the switching, such as defined in amended independent claims 17 and 29.

Moreover, the Duff GB Patent at page 3, lines 22-27 states:

By more rapidly switching the circuit shown in Figure 1 between the normal condition and the add pulse condition, the instantaneous frequency appearing at terminal 8 will more closely approach the desired average frequency over progressively shorter time periods.

This text of the Duff GB Patent explicitly recommends employing a high switching frequency and therefore teaches away from the control device being configured to drive the oscillator such that the at least two generated output frequencies are alternated at an average frequency that is less than the at least two possible output frequencies such as recited in amended independent claim 17 and from alternating the at least two generated output frequencies in an average frequency that is less than the at least two different output frequencies as recited in amended independent claim 29.

In view of the above, amended independent claims 17 and 29 are not taught or suggested by the Duff Patent alone or in combination with the other cited references.

Furthermore, dependent claims 18-19 and 22-25 further define patentability distinct amended independent claim 17 and dependent claims 30-31 further define patentability distinct amended independent claim 29. Therefore these dependent claims are also believed to be allowable.

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In addition, Applicant points to the Examiners rejection of dependent claim 24. Amended independent claim 17 now includes the limitation of the control device being configured to drive the oscillator such that the at least two generated output frequencies are alternated at an average frequency that is less than the at least two possible output frequencies. Also, dependent claim 24 now further limits amended independent claim 17 to include a frequency divider connected to the output of the oscillator, which in combination with the slower switching frequency now claimed in amended independent claim 17 enables an even slower switching frequency. This combination structure is not taught by the Duff GB Patent. One example embodiment having the combination of limitations of amended independent claim 17 and dependent claim 24 is described at page 8 of the clean version of the substitute specification and states that the frequency dividers cause the averaging period to be extended. Thus, the combination of the features in amended independent claim 17 and dependent claim 24 provide an effect which is not taught by the Duff GB Patent. The smaller switching frequency is desirable as smaller frequencies generally are easier to handle and control.

In addition, in regards to dependent claim 18, the Examiner cites the Duff Patent and states the Duff GB Patent teaches the control device being configured to drive the oscillator with the bit stream generator according to a delta-sigma principal, because the Examiner states the controlled device of Duff operates in an analog to digital conversion principal, which is one form of delta-sigma conversion. Applications respectfully submit, however, that this statement by the Examiner is not correct in that delta-sigma conversion is a special form of analog to digital conversion. Therefore, the Duff Patent does not teach or suggest the limitation of dependent claim 18.

Therefore, Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. § 102(b) rejection to claims 17-19, 22-25, and 29-31, and request allowance of these claims.

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CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 17-19, 22-25, and 29-31 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 17-19, 22-25, and 29-31 are respectfully requested.

No fees are required under 37 C.F.R. 1.16(b)(c). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 50-0471.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to Patrick G. Billig at Telephone No. (612) 573-2003, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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Date: September 5, 2007
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